

1982 Jeep 4 Tune-Up

TUNE-UP

ENGINE IDENTIFICATION

Engine can be identified by the fourth digit of the Vehicle Identification Number (VIN), which is stamped on a plate attached to top left corner of instrument panel.

VIN ENGINE CODE

Application	Code
2.5L (151") 2-Bbl.	B

ENGINE IDENTIFICATION

Engine code is stamped into a pad on the front left top corner of engine block. On engines built for sale in Georgia and Tennessee, a second code number is stamped into the left rear flange.

TUNE-UP NOTES

NOTE: Due to production changes, always refer to Engine Tune-Up Decal in engine compartment before attempting tune-up. In the event of a conflict between specifications given in this manual and decal specifications, use the decal specifications.

CAUTION: When performing tune-up on vehicles equipped with catalytic converters, do not allow or create a condition of engine misfire in one or more cylinders for an extended period of time. Damage to converter may occur due to loading converter with unburned air/fuel mixture.

ENGINE COMPRESSION

Check compression pressure with engine at normal operating temperature, all spark plugs removed, and throttle and choke valves wide open.

COMPRESSION SPECIFICATIONS

Compression Ratio	8.2:1
Compression Pressure	140 psi (9.8 kg/cm ²)
Maximum Variation Between Cylinders	30 psi (2.1 kg/cm ²)

VALVE CLEARANCE

All engines have hydraulic lifters. Lifters should be adjusted to zero lash.

VALVE ARRANGEMENT

I-E-I-E-E-I-E-I

SPARK PLUGS

SPARK PLUG SPECIFICATIONS

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
All Models060 (1.5)	7-15 (10-23)

SPARK PLUG TYPE

Application	AC No.
All Models	R44TSX

HIGH TENSION WIRE RESISTANCE

Do not puncture spark plug wires with any type of probe. Remove spark plug wire and check resistance using an ohmmeter.

RESISTANCE (Ohms)

Wire Length	Minimum	Maximum
0-15"	3000	10,000
15-25"	4000	15,000
25-35"	6000	20,000
Over 35"	8000	25,000

DISTRIBUTOR

All models are equipped with a Delco High Energy Ignition system distributor. No adjustments are necessary.

IGNITION TIMING

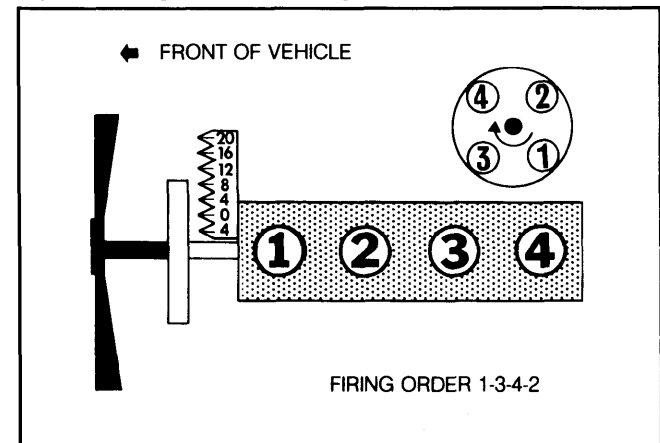
NOTE: Engines are equipped with a receptacle for a magnetic probe timing light, located 9.5° ATDC. Do not use this location for timing with a conventional light.

Check or adjust ignition timing with engine at normal operating temperature, distributor vacuum hose disconnected and plugged, and engine at curb idle speed.

TIMING SPECIFICATIONS (Degrees BTDC@RPM)

Application	Specification
Federal	12@900
Calif.	8@900
High Altitude	17@900

Fig. 1: Timing Mark and Firing Order



Magnetic timing socket located at 9.5° ATDC.

TUNE-UP (Cont.)

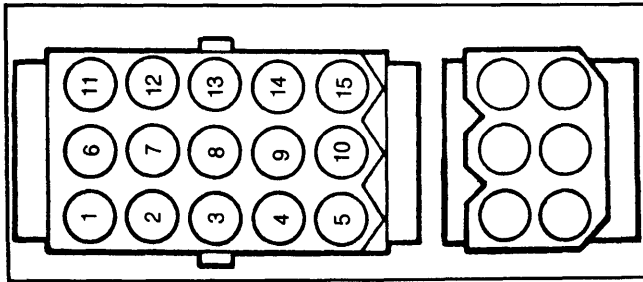
HOT (SLOW) IDLE RPM

CAUTION: Do not idle engine for over 3 minutes at a time. If idle adjustment is not completed within 3 minutes, run engine at 2000 RPM for 1 minute before continuing. Repeat as necessary.

1) Warm engine to normal operating temperature and connect tachometer. Disconnect and plug deceleration valve hose and canister purge hose. Remove air cleaner.

2) On models with feedback carburetor, insert positive dwell meter probe into terminal No. 6 and negative probe into terminal No. 13 of diagnostic connector. See Fig. 2.

Fig. 2: Diagnostic Connector Terminal Positions



Insert dwell meter probes to terminals No. 6 and No. 13.

3) Dwell meter should be oscillating (15° sweep maximum) and pointer should be in the 10-50° range. If equipped with air conditioning, adjust idle speed screw to obtain correct RPM. Turn A/C control switch "ON".

4) Open throttle momentarily to extend solenoid arm. Adjust solenoid idle speed screw to obtain solenoid RPM. Turn nut on solenoid plunger to obtain solenoid RPM.

5) If not equipped with air conditioning, adjust solenoid idle speed screw with solenoid energized to obtain specified RPM. Disconnect solenoid wire connector and adjust idle speed screw to obtain curb idle speed.

IDLE SPEED (RPM)

Application	Curb Idle	Solenoid Energized
All Models	500	900

IDLE MIXTURE

NOTE: Do not idle engine for over 3 minutes at a time. If idle mixture adjustment is not completed within 3 minutes, run engine at 2000 RPM for 1 minute before continuing. Repeat as necessary.

MIXTURE SCREW PLUG REMOVAL

NOTE: Mixture adjustment is not a normal tune-up procedure. DO NOT remove idle mixture plugs unless vehicles fails emissions testing or throttle body has been disassembled.

1) Remove carburetor and drain fuel. Place upside down on holding fixture. Place a punch in locator point in throttle body (beneath mixture plug).

2) Drive punch through locator until plug breaks, then drive out loose pieces by holding punch at a 45° angle. Reinstall carburetor and make adjustments using a thin wall 3/16" deep socket.

LEAN DROP PROCEDURE

Federal Vehicles

1) Connect an accurate tachometer, start engine, and warm to normal operating temperature. Place transmission in neutral. Starting from full rich position, turn mixture screw leaner (clockwise) until a noticeable RPM loss is indicated.

2) Turn mixture screw richer (counterclockwise) until highest RPM reading is obtained. Do not turn screw any further than point at which highest RPM is first obtained.

3) As final adjustment, turn mixture screw clockwise to obtain specified drop in engine RPM. If final RPM differs more than 30 RPM from specified curb idle speed, reset curb idle to specification and repeat mixture adjustment.

LEAN DROP RPM

Application	RPM Drop
All Federal Models	100

DWELL METER PROCEDURE

California Vehicles

1) Remove mixture screw plug. While carburetor is removed from vehicle, turn mixture screw in until lightly seated, then back out 2½ turns.

2) If plug in air horn which covers idle air bleed screw is already removed, turn screw in until seated and back out 1½ turns. If plug is in place, DO NOT remove.

3) Install carburetor on engine. Disconnect bowl vent line at carburetor. Disconnect EGR and canister purge line at carburetor and plug carburetor ports. Connect dwell meter (set on 6 cylinder scale) to mixture solenoid test lead near carburetor. Connect tachometer to connector on distributor.

4) Place transmission in neutral and start engine. Operate at fast idle for at least 3 minutes to allow oxygen sensor to warm up, and system to shift to Closed Loop operation. Return engine to idle and adjust speed to 700 RPM.

5) Adjust idle mixture screw carefully to obtain 25° dwell reading. Back screw out to raise dwell; turn screw in to lower dwell reading. Allow engine to operate between adjustments to stabilize readings.

6) Disconnect mixture control solenoid wire and check that idle speed drops at least 50 RPM. If not, check idle air bleed circuit. If not correct, repeat adjustment procedure. Replace all hoses and set idle speed to specification. Remove test equipment.

COLD (FAST) IDLE RPM

Set idle with engine at normal operating temperature and EGR disconnected. Position fast idle screw on high step of fast idle cam and turn to obtain fast idle RPM.

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TUNE-UP (Cont.)

FAST IDLE (RPM)

All Models	2400
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AUTOMATIC CHOKE

Choke coil cover is riveted in place and no adjustment is necessary or possible.

FUEL PUMP

Perform fuel pump test with air cleaner removed and fuel inlet line or filter disconnected at carburetor.

IGNITION

DISTRIBUTOR

All models are equipped with Delco High Energy Ignition System distributor which requires no servicing.

TOTAL SPARK ADVANCE@2000 RPM

Application	With Vac. Advance	Without Vac. Advance
All Models	27°	7°

DISTRIBUTOR PICKUP COIL RESISTANCE (Ohms)

All Models	500-1500
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IGNITION COIL

Primary resistance should be zero or nearly zero, secondary resistance should be less than infinity.

COIL OUTPUT

All Models	25-35 KV Minimum
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FUEL SYSTEMS

CARBURETORS

Application	Model
Federal	Rochester 2SE
California	Rochester E2SE

ELECTRICAL

BATTERY

BATTERY SPECIFICATIONS

Application	Cold Cranking Amps ¹	Reserve Capacity Minutes
Standard	380	75
Optional	450	90

¹ — At 0°F (-18°C).

Disconnect fuel return line at fuel filter and plug nipple or filter. Make all tests at idle speed.

FUEL PUMP SPECIFICATIONS

Application	Pressure psi (kg/cm ²)	Volume Pints (Liters)
All Models	6.5-8.0 (.35-.46)	1 in 30 sec. (.47 in 30 sec)

EMISSION CONTROL

NOTE: See appropriate article in EMISSION CONTROL Section.

GENERAL SERVICING

STARTER

Delco-Remy solenoid actuated with overrunning clutch.

STARTER SPECIFICATIONS

Application	Volts	Amps	Test RPM
All Models	9	45-70	7000-11,900

ALTERNATOR

All models are equipped with Delco solid state alternators with internal voltage regulators.

ALTERNATOR SPECIFICATIONS

Application	Rated Amp. Output
Standard	42
Optional	63

Field Current Draw

All Models	¹ 4.0-5.0
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¹ — At 80°F (27°C).

ALTERNATOR REGULATORS

Delco-Remy non-adjustable, integral with alternator.

REGULATOR SPECIFICATIONS

Operating Voltage ¹	13.9-14.9
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¹ — At 50-100°F (10-38°C).

ADJUSTMENT

BELT ADJUSTMENT

Application	Tension Using Strand Tension Gauge Lbs. (Kg)
New Belts	125-155 (57-70)
Used Belts	90-115 (41-52)

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GENERAL SERVICING (Cont.)

SERVICE INTERVALS

REPLACEMENT INTERVALS

Component	Interval (Miles)
Oil Filter	7500
Fuel Filter	15,000
Air Filter	30,000
PCV Filter & Valve	30,000
Oxygen Sensor (Calif.)	30,000
Charcoal Canister Filter	30,000
Spark Plugs	30,000

CAPACITIES

FLUID CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	3.0 qts. (2.8L)
Cooling System	7.8 qts. (7.4L)
Man. Trans. (SAE 85W-90)	
T4 4-Speed	3.0 pts. (1.7L)
T5 5-Speed	4.0 pts. (1.9L)
Transfer Case (SAE 85W-90)	4.0 pts. (1.9L)
Front Axle (SAE 85W-90)	2.5 pts. (1.2L)
Rear Axle (SAE 85W-90)	4.8 pts. (2.3L)
Fuel Tank	
Standard	14.8 gals. (56.0L)
Optional	20.0 gals. (75.9.0L)